**CARBON NANOTUBE CONDUCTOR FOR TRENCH CAPACITORS**

Abstract

[00026] A trench-type storage device includes a trench in a substrate (100), with bundles of carbon nanotubes (202) lining the trench and a trench conductor (300) filling the trench. A trench dielectric (200) may be formed between the carbon nanotubes and the sidewall of the trench. The bundles of carbon nanotubes form an open cylinder structure lining the trench. The device is formed by providing a carbon nanotube catalyst structure on the substrate and patterning the trench in the substrate; the carbon nanotubes are then grown down into the trench to line the trench with the carbon nanotube bundles, after which the trench is filled with the trench conductor.